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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/825,649	04/04/2001	Hiroki Kitahori	JP920000056US1	5469

7590 07/07/2003

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EXAMINER

RODRIGUEZ, GLENDA P

ART UNIT PAPER NUMBER

2697

DATE MAILED: 07/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/825,649

Applicant(s)

KITAHORI ET AL.

Examiner

Glenda P. Rodriguez

Art Unit

2697

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5, 14, 15 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Araki et al. (US Patent No. 5, 657, 190).

Regarding Claim 1, Araki et al. teach a disk device, comprising:

A magnetic disk for storing data (See Fig. 1, Element 2);

An enclosure for containing the magnetic disk (See Fig. 1.

Araki et al. teach that the medium is enclosed in a housing surrounding the magnetic disk along with all its components.);

And a local magnetic field generator provided in the enclosure for generating a local magnetic field when the enclosure is set in an external magnetic field (Col. 6, Lines 46-49 and Lines 53-60. Araki et al. teach that the magneto resistive head that is enclosed in the housing generates a

magnetic field used for writing or reproducing in the magnetic disk.).

Regarding Claim 2, Araki et al. teach all of the limitations of Claim 1. Araki et al. also teach wherein the local magnetic field generator is provided on a surface of the enclosure facing the magnetic disk, and the local magnetic field is generated from the enclosure toward the magnetic disk (See Fig. 1 and Col. 6, Lines 46-49 and Lines 53-60. Araki et al. also teach that the medium is enclosed in a housing surrounding the magnetic disk along with all its components. Araki et al. teach that the magneto resistive head that is enclosed in the housing generates a magnetic field used for writing or reproducing in the magnetic disk.).

Regarding Claim 3, Araki et al. teach all the limitations of Claim 1. Araki et al. also teach wherein the local magnetic field has a main component parallel to a surface of the magnetic disk in an area where the magnetic disk is located (See Fig. 1 and Col. 6, Lines 46-49 and Lines 53-60. It is known that the MR head that is enclosed in the housing generates a magnetic field used to carry out recording and/or reproducing operations in a magnetic medium and has to lie parallel to the surface in order to operate accordingly.).

Regarding Claim 4, Araki et al. teach a disk device, comprising:

A disk-like storage medium having a magnetic film formed on its surface (Col. 5, Lines 65-67);

And an enclosure case covering the disk-like storage medium and having pole pieces, one of which is a starting point of magnetic flux generation (Col. 6, Lines 46-49 and Lines 53-60. Araki et al. teaches an MR head that to a person of ordinary skill in the art is a pole piece, that generates a flux to record and/or reproduce in the magnetic media.).

Regarding Claim 5, Araki et al. teach all the limitations of Claim 4. Araki et al. also teach wherein the disk device erases data stored in the disk-like storage medium by magnetic flux starting from one of the pole pieces when the disk device is set in an external magnetic field (Col. 3, Lines 19-23, Col. 6, Lines 46-49 and Lines 53-60. Araki et al. teaches an MR head that to a person of ordinary skill in the art is a pole piece when exposed in an external magnetic field, that generates a flux to record and/or reproduce in the magnetic media.).

Regarding Claim 14, Araki et al. teach a disk device, comprising:

1. A disk-like storage medium having a surface with a magnetic film having a predetermined coercive force (Col. 5, Lines 65-67. It is known in the art, that the film

placed on the magnetic medium has a certain resistance to force.);

2. An enclosure case containing the disk-like storage medium (See Fig. 1. Araki et al. teach that the medium is enclosed in a housing surrounding the magnetic disk along with all its components.);
3. And a magnetic field generator on a side of the enclosure case facing the disk-like storage medium for forming a magnetic field with a magnetic gradient that is steeper than that of an external magnetic field when the enclosure case is set in the external magnetic field (Col. 3, Lines 19-23, Col. 6, Lines 46-49 and Lines 53-60. Araki et al. teach a procedure when the MR head is placed in an external magnetic field, a MR flux, because it is closer to the medium, has a much higher magnetic gradient.).

Regarding Claim 15, Araki et al. teach wherein intensity of the magnetic field formed by the magnetic field generator is stronger than the predetermined coercive force of the disk-like storage medium (Col. 3, Lines 19-23, Col. 6, Lines 46-49 and Lines 53-60. Araki et al. teach a procedure

when the MR head is placed in an external magnetic field, a MR flux, because it is closer to the medium, has a much higher magnetic gradient.).

Regarding Claim 18, Araki et al. teach a data-erasing method for erasing data stored in a magnetic disk in a disk device, comprising the steps of:

Generating an external magnetic field (Pat. No. 5, 657, 190; Col. 3, Lines 19-23. Araki et al. teach that the MR element is placed in an induced external magnetic field.);

Inserting the disk device into the external magnetic field (Pat. No. 5, 657, 190; Col. 3, Lines 19-23. Araki et al. teach that the MR element is inside a housing along with a magnetic disk and this is placed in an induced external magnetic field.);

And Erasing data stored in the magnetic disk by generating a magnetic field with a magnetic gradient that is steeper than that of the external magnetic field inside the disk device (Col. 3, Lines 19-23, Col. 6, Lines 46-49 and Lines 53-60. Araki et al. teach a procedure when the MR head is placed in an external magnetic field, a MR flux, because it is closer to the medium, has a much higher magnetic gradient.).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 10, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Araki et al. (US Patent No. 5, 657, 190) in view of Tielemans et al. (US Patent No. 6, 046, 881).

Regarding Claim 10, Araki et al. teach a disk device for storing and reading data, comprising:

A magnetic disk for storing data (See Fig. 1, Element 2);

An enclosure for containing the magnetic disk (Pat. No. 5, 657, 190; See Fig. 1. Araki et al. teach that the medium is enclosed in a housing surrounding the magnetic disk along with all its components);

And a magnetic gap formed on said at least one surface of the enclosure (Pat. No. 5, 657, 190; Col. 6, Lines 46-49 and Lines 53-60. It is known to a person of ordinary skill in the art, that if a magnetic field is generated, a gap has to there between be created between the generator and the surface.

It is also known that the MR head has to have a gap from the recording medium, because if there is any contact between the head and the disk, a head crash may occur, hence creating an error.).

Araki et al. fail to teach that at least one surface of the enclosure facing the magnetic disk is composed of soft magnetic material. However, this feature is well known in the art, as disclosed by Tielemans et al., wherein it teach one surface of the enclosure facing the magnetic disk is composed of soft magnetic material (Pat. No. 6, 046, 881; Col. 3, Lines 29-34). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Araki et al.'s invention in order for the medium to be able to generate a magnetic field by the use of magnetic materials.

Regarding Claim 11, Araki et al. and Tielemans et al. teach all the limitations of Claim 10. Tielemans et al. also teach wherein the magnetic gap is a vacancy formed in the enclosure composed of the soft magnetic material (Pat. No. 6, 046, 881; Col. 3, Lines 29-34. It is obvious to a person of ordinary skill in the art that there exists a vacancy between the enclosure and the disk.). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Araki et al.'s

invention in order for the medium to be able to generate a magnetic field by the use of magnetic materials.

Regarding Claim 12, Araki et al. and Tielemans et al. teach all the limitations of Claim 11. Araki et al. also teach wherein a magnetic circuit generating magnetic flux toward the magnetic disk is formed around the vacancy (Pat. No. 5, 657, 190; Col. 6, Lines 46-49 and Lines 53-60. It is obvious that for a magnetic head to move and produce a magnetic flux, a group of components forming part of a circuit have to be inside the enclosure in order for the MR head to be operational.).

5. Claims 6, 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Araki et al. in view of Davies et al. (US Patent No. 5, 870, 260).

Regarding Claim 6, Araki et al. teach a disk device, comprising:

1. A magnetic disk for storing data (See Fig. 1, Element 2);
2. An enclosure containing the magnetic disk (See Fig. 1.

Araki et al. teach that the medium is enclosed in a housing surrounding the magnetic disk along with all its components.);

Araki et al. fail to teach a pair of protrusions provided on a surface of the enclosure facing the magnetic disk, wherein the protrusions are composed of soft magnetic material formed toward the magnetic disk. However, this feature is well known in the art as disclosed by Davies et al., wherein it

teaches a pair of protrusions in a disk head that generate a magnetic field having a soft magnetic material (Pat. No. 5, 870, 260; Col. 5, Lines 1-14). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Araki et al.'s invention in order for the medium to be able to generate a magnetic field by the use of magnetic materials.

Regarding Claim 7, Araki et al. and Davies et al. teach all the limitations of Claim 6. Davies et al. further disclose that wherein the pair of protrusions is provided in a position corresponding to an inner circumference side of the magnetic a disk (Pat. No. 5, 870, 260; Col. 5, Lines 1-14. It is obvious that the MR head is able to position itself in the inner circumference of the disk, making the media able to generate the local magnetic filed on the recording medium.). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Araki et al.'s invention in order for being able to extend the magnetic field throughout all the magnetic disk

Regarding Claim 9, Araki et al. and Davies et al. show all the limitations of Claim 6. Davies et al. also teach wherein the pair of protrusions is located in a circumferential direction of the magnetic disk while maintaining a predetermined gap there between (Pat. No. 5, 870, 260; Col. 5, Lines 1-14 ands also See Fig. 1, Element 118, 119, 120. Davies et

al. teach that the MR head has a predetermined gap in which a magnetic flux is then applied to the recording medium. It is obvious that the MR head is able to position itself in the inner circumference of the disk, making the media able to generate the local magnetic field on the recording medium.). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Araki et al.'s invention in order for the medium to have a magnetic flux going from one pole to another pole, passing through the medium in the process.

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Araki et al. and Davies et al. as applied to Claim 6 above, and further in view of Tielemans et al. (US Patent No. 6, 046, 881). Araki et al. and Davies et al. teach all the limitations of Claim 6. Araki et al. and Davies et al. fail to teach wherein the enclosure includes a box-like base having an opening part, and a top cover for covering the opening part of the base, and the pair of protrusions is provided on the top cover. However, this feature is well known in the art, as disclosed by Tielemans et al., as disclosed by Tielemans et al., wherein it teaches one surface of the enclosure facing the magnetic disk is composed of soft magnetic material (Pat. No. 6, 046, 881; Col. 3, Lines 29-34). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Araki et al.'s invention in

order for the medium to be able to be magnetic and receive the magnetic flux from the external magnetic field.

7. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Araki et al. and Tielemans et al. as applied to Claim 12 above, and further in view of Ahmad et al. (US Patent No. 6, 175, 469). Araki et al. and Tielemans et al. teach all the limitations of Claim 12. Araki et al. and Tielemans et al. fail to teach wherein the magnetic circuit is integrally formed with the enclosure as a single piece. However, this feature is known in the art, as disclosed by Ahmad et al., wherein it teach a top cover of a housing that contains the magnets (Pat. No. 6, 175, 469; Col. 8, Lines 19-29). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Araki et al.'s invention in order for the medium to have the components in one piece in order for the medium to be able to perform the magnetic field more effectively.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Glenda P. Rodriguez whose telephone number is 703-305-8411. The examiner can normally be reached on Monday thru Thursday: 7:00-5:00; alternate Friday.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Hofsass can be reached on 703-305-4717.

Art Unit: 2697

The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-6743 for regular communications and 703-308-6743 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-9000.

gpr
June 23, 2003


Richmond Dorvil
Primary Examiner